

CES The Winter Consumer Electronic Show is going on as this issue is being mailed out, and I'll report on any firm AstroVision developments next month. Rumors are available now, such as plans to have five games out in January, plus two more by July. One of these will be a Galaxian game, based on the arcade game. George Moses is helping with the MUSIC cartridge. Rumor also has it that the very-long-awaited keyboard/memory addition is at the FCC for approval, and seems to have a \$600 price tag.

INTERACTIVE COMPUTER OPERATION has finally been accomplished by two Bally owners. A tape program was loaded into one machine and transferred to the other through an amplifier. Then the users/machines alternated activities, transferring choices, etc., from one machine to the other. More details as I get them.

SCREEN POSITION. I've had an occasional query about the control - or lack of control- of the horizontal position of the display. Has anyone come up with a method to move the display to the left about one character (above and beyond the TV's horizontal control)?

BLUE RAM ENHANCEMENTS are discussed on pp 36 and 37. As you will read, a breakthrough has been made where now Bally BASIC programs can be stored in the Blue Ram, allowing the full use of the 4K memory for Basic statements. It had been thought earlier that only machine codes could be stored there, but this new technique now allows expansion of programs by all users, not just those adept at machine language.

A new product is the electronics for a modem attachment. The modem (MODulator-DEModulator) is a device that converts data pulses of the computer into audio tones understandable by the telephone system, and vice versa. These can be either a kind that you physically place the telephone handset into, or a kind that plugs into the telephone wall jack. Once you have tied into the telephone line, you can communicate with virtually any other so-connected computer. The electronics discussed on p. 37 will work with the Livermore STAR, and may work with others. The major problem is lack of standardization of computer equipment.

POPULAR COMPUTER DESCRIPTIONS are contained in Creative Computing, Dec.80. These are not feature-for-feature comparisons with good/bad points outlined, but individual reviews of each of the most popular systems. There is also a tabulated section that makes specification comparisons (memory size, price, etc.). Another article discusses some of the various BASIC language dialects.

TITLE/INSTRUCTION PROGRAM Corrections were received from Steve Walters for his utility program, printed on p.20. The program to be loaded should read as follows:

```
:PRINT; TV=0; TV=1; PRINT; PRINT ".PROGRAM TITLE", PRINT ".BY AUTHOR";
PRINT; LIST; PRINT; PRINT ".STANDBY FOR "; PRINT ":RETURN;:INPUT 2"
```

When this is entered, the fourth line of the fourth paragraph, p.20, will read -
.STANDBY FOR :RETURN; :INPUT 2

A Byte-saving Hint

If you have unused variables (A thru Z) you can set them equal to the recurring numbers in your program. This saves 1 byte each time a 2-digit number is used, 2 bytes each time a 3-digit number is used, etc. Furthermore, since these variables can be set during the tape loading rather than as a part of the program content itself, it does not take any program memory space to set them. Since they are not affected by stopping and re-running the program, the procedure works nicely.

THE SOURCE IS A SERVICE COMPRISING A VERY LARGE DATA BANK THAT CAN BE ACCESSED BY A COMPUTER HAVING A TELEPHONE CONNECTION. AS A SERVICE, THERE IS A ONE-TIME CONNECT CHARGE OF \$100, WHICH PROVIDES YOU WITH THE ACCESS CODES AND LOCAL TELEPHONE NUMBERS TO GAIN ENTRY TO THE SYSTEM, LOCATED NEAR WASHINGTON, D.C. IN ADDITION, THERE IS AN HOURLY FEE FOR THE USE OF THE COMPUTER. ACTUALLY, THE MACHINE COUNTS MINUTES AND ADDS THESE UP TWICE A MONTH AND CONVERTS TO HOURS, THEN BILLS YOUR VISA, ETC. ACCOUNT.

SO WHAT DO YOU GET? FROM THE COMPUTER HOBBYIST STANDPOINT, YOU CAN TALK BASIC, COBOL, OR FORTRAN TO IT. THEY ALSO HAVE THEIR OWN, CALLED INFO V, WHICH IS A DATA-TYPE OF SYSTEM, SUCH AS SETTING UP PAYROLLS, ETC. IF YOU WANT TO KEEP PROGRAMS IN THEIR MACHINE, STORAGE TIME IS AVAILABLE AT ABOUT \$1 FOR 2K PER MONTH.

A SORT OF WORD PROCESSOR IS AVAILABLE - I AM USING IT FOR THIS SEGMENT - WITH CERTAIN EDIT FUNCTIONS, SUCH AS ERROR CORRECTION AND RIGHT MARGIN JUSTIFICATION. I HAVEN'T LOCATED ALL ITS CAPABILITIES YET.

USER-TO-USER COMMUNICATION IS POSSIBLE ON THREE DIFFERENT LEVELS. 1: BROADCAST - A BILLBOARD OR CLASSIFIED AD SECTION IS AVAILABLE, WHERE ANYONE CAN READ YOUR WORDS, LOCATED IN A CATEGORY THAT YOU CAN SELECT (HOUSE FOR SALE, CAR WANTED, SOFTWARE FOR SALE, ETC.) 2: INDIVIDUAL - ONE CAN WRITE MESSAGES, TO SPECIFIC PERSONS. WHEN THEY SIGN IN, THEY WOULD ASK FOR 'MAIL', AND RECEIVE THE MESSAGES THEN. 3: FACE-TO-FACE - TWO PEOPLE CAN MAKE PREARRANGEMENTS TO BE 'UP' AT THE SAME TIME AND COMMUNICATE DIRECTLY WITH EACH OTHER.

DATA BASE - A LARGE VOLUME OF THE COMPUTER MEMORY IS TAKEN UP WITH VARIOUS TYPES OF DATA. FOR EXAMPLE, AIRLINE SCHEDULES, STOCK MARKET QUOTATIONS, NEW YORK TIMES AND UPI REPORTS, JACK ANDERSON'S COLUMN, OVER 600 ITEMS. A SMALL PART OF THE CATALOG IS SHOWN HERE.

Lofton,
Louisiana Ne.
N or S

Lunar Landing (game)-11

M
Magic-DATA MAGIC
Mail-DATA MAILCALL; MAILCK
Maine News or Sports-UPIS ME
N or S

Malino, Emily (home decorating)-UPI
F 1273

Management-NYTCDB(P0078)
Manuals-DATA SYSDOC
Marijuana-NYTCDB(P0079)

Market a Product (game)-PLAY
MARKET

Markov Chain (stat.)-INFO MARKOV
Analyses (astrol.)-
COMPATQUEST,

Mar.
(038, 039)
Stock Pulse-DN
Trends-UNISTOX (12)
What the Market Did-UNIS
(054)

Money Savers-DATA BUCKS;
MONEY
Montana News or Sports-UPIS MT
N or S

Mortgage Analysis-INFO MORGAG
Motion Graphs-INFO LFROCS
Movie Reviews-AUTO CINE; UPI F
2790

Moving Plans-DATA TRAVEL; see
"Home"; (astrol.) MOVE-
QUEST

POST READ MUSIC;
-UNISTOX (068)
(171)

New
Nim (game)
North Dakota Ne-
ND N or S
"Notes on People"-NYTDCB
Notes, Treasury-UNISTOX (1
Nuclear Wastes-NYTCDB(P
Numbers-INFO #123

O
OFF-To sign off SOUR
type OFF in comm
hang up your phor
Ohio News or Sports-
Ohm's Law (stat.)-
OHM2
Oklahoma News (

The December issue of KILOBAUD MICROCOMPUTING has a good "how I did it" article on getting up on the SOURCE, p. 180.

A phone call to 1-800-336-3330 will indicate if there is a local telephone number available to you. Communities of less than 50,000 have not yet been provided with such numbers, but this keeps changing.

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4 .
5 *SURF SOUNDS (1)*          *CRICKETS (2)*
6 IF &(23)=8GOTO 11
7 IF &(22)=8GOTO 7200
10 CLEAR ;:RETURN ;NT=0;&(21)=0;&(22)=0;&(16)=71;&(17)=0;&(18)=0;&(19)=0;&(20)
=0;GOTO 6
11 FC=245;BOX 0,-20,160,48,3
15 BC=7;&(23)=179;&(18)=150;&(16)=50;&(19)=1
20 BOX RND (160)-88,RND (30)-44,RND (30),1,3;BOX RND (200)-100,RND (28)-44,30,
3,1
30 B=RND (11)-7
40 C=RND (4)-3;IF C=0C=-1
45 G=RND (3)-2;IF G=0G=-1
47 IF H>23G=-(ABS(G))
48 IF H<23G=(ABS(G))
50 P=RND (5)+10
60 FOR Q=1TO P
70 E=E+C;&(22)=E;IF E<35E=35
75 IF E>41E=41
80 D=D+B;&(18)=D;IF D>254D=250
83 IF D<150D=150
100 H=H+G;&(21)=H;IF H<19H=19
106 IF H>30H=30
110 NEXT Q
115 &(19)=RND (3);&(17)=RND (7)
120 GOTO 20
7200 CLEAR
7205 FC=12;BC=0
7210 FOR A=1TO 60
7220 BOX RND (160)-80,RND (88)-44,1,1,1
7230 NEXT A
7240 &(16)=255
7250 &(22)=40;&(21)=15
7260 &(20)=RND (50)+10
7270 &(23)=RND (255)
7280 GOTO 7240

```

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```

2 .
3 .
4 *** CIRCLE PLOTTER
5 CLEAR ;:RETURN ;NT=0
7 BC=0;FC=131
10 INPUT "_Xa"A
11 INPUT "_Y"B
12 INPUT "RAD?"R
13 U=1;O=1;P=1;Q=1
15 F=A-R
16 FOR X=FTO F+2bR
17 S=RbR-((X-A)b(X-A));T=Uc4;IF T>RcBT=U-1
18 FOR U=TTTO 500
19 IF (UbU)>SGOTO 21
20 NEXT U
21 U=U-1;IF (S-UbU)<((U+1)b(U+1))-SGOTO 23
22 U=U+1
23 Y=U+B
24 BOX X,Y,0,P,Q;BOX X,Y-(2bU),0,P,Q
25 BOX Y-B+A,X-A+B,0,P,Q
26 BOX Y-B-(2bU)+A,X-A+B,0,P,Q
27 NEXT X
30 CY=40;GOTO 10
110 GOTO 10

```



```

1 .
2 .
3 .GRANDFATHER CLOCK
4 :RETURN ;CLEAR ;NT=0;&(0)=0;&(1)=0;BC=0;&(2)=131;&(3)=131;FC=234;&(9)=20;A=
0;P=115
5 PRINT "SET TIME";INPUT "HR"H;INPUT "MIN"M;PRINT "#1 TO RUN
6 IF &(23)=8GOTO 8
7 GOTO 6
8 CLEAR
9 CX=-17;CY=37;PRINT "11";CY=39;CX=-3;PRINT "12";CY=37;CX=14;PRINT "1
10 CX=-23;PRINT "10";CX=20;PRINT "2";CX=-24;PRINT "9";CX=25;PRINT "3
11 CX=-19;PRINT "8";CX=20;PRINT "4";CX=-13;PRINT "7";CX=14;PRINT "5";CX=0;CY
=4;PRINT "6
12 BOX 0,22,60,44,3;BOX 0,22,58,42,3;BOX 0,-22,41,44,1;BOX 0,-22,31,40,3
13 BOX -35,-39,32,10,1;BOX 35,-39,32,10,1
14 @ (1)=42;@ (2)=53;@ (3)=47;@ (4)=71;@ (5)=71;@ (6)=47;@ (7)=42;@ (8)=53;@ (9)=42;@ (1
0)=47;@ (11)=53;@ (12)=71
15 @ (13)=71;@ (14)=42;@ (15)=47;@ (16)=53;GOTO 310
20 LINE 0,0,4;LINE 10,-30,2;LINE 0,0,2;BOX 10,-33,5,5,2;LINE -10,-30,1;BOX -10
,-33,5,5,1;RETURN
21 LINE 0,0,4;LINE -10,-30,2;LINE 0,0,2;BOX -10,-33,5,5,2;LINE 10,-30,1;BOX 10
,-33,5,5,1;RETURN
25 &(22)=0;&(19)=57;&(16)=@ (U);&(17)=18;&(18)=2;&(22)=188;&(21)=207;&(18)=58
26 FOR B=1TO 11;&(22)=-16B+61;&(21)=-16B+207;NEXT B
27 &(21)=195;&(17)=0;&(21)=194;&(22)=40;&(21)=193;RETURN
29 U=0
30 FOR G=2TO A
31 U=U+1
35 S=S+1;Q=Sc2;GOSUB RM+20;GOSUB 25;I=Uc4;IF RM=0P=40;GOTO 100
37 GOTO 31
40 NEXT G
44 IF R#75P=115;GOTO 100
45 P=70
50 FOR G=1TO H
55 S=S+1;Q=Sc2;U=17;@ (U)=66;GOSUB RM+20;GOSUB 25
60 GOTO 100
70 NEXT G
80 P=115
100 &(21)=0;&(22)=0;&(16)=71;&(17)=8;&(19)=0
101 S=S+1
103 Q=Sc2;GOSUB RM+20
105 IF S>59S=0
106 CX=30;PRINT #3,S," "
110 &(18)=(RM+3)b5;&(23)=28;&(21)=213;&(22)=51;&(21)=0;&(22)=0
112 IF S=0GOTO 200
114 T=80;GOTO P
115 FOR Z=1TO T;NEXT Z
116 GOTO 101
200 M=M+1;IF M=60M=0;GOTO 300
210 CX=-30;IF M<10PRINT "0",#0,M,
220 IF M>9PRINT #0,M,
225 R=15;IF M=0R=75
226 A=(M+R)c15;IF RM=0S=S+(Ab2);GOTO 29
230 P=115;GOTO 100
300 H=H+1;IF H=13H=1
310 CX=-48;CY=-39;IF H<10PRINT " ",
320 PRINT #0,H,;CX=-36;PRINT ":",
330 GOTO 210

```

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```

1 .COLOR CHART
2 .
3 .BY JIM WINN
4 .
5 E=480;F=1250
10 CLEAR ;BC=0;FC=7;C=0;NT=0
20 PRINT "    0=BLACK    7=WHITE    90=RED    205=CYAN    172=GREEN    4
3=MAGENTA
30 PRINT "    249=BLUE    126=YELLOW
70 NT=3;CX=-60;CY=-20;PRINT "SELECT YOUR COLOR ?";NT=0
80 K=KN(1)C30
85 CX=-42;CY=-30
90 IF K=-4GOSUB 400
100 IF K=-3GOSUB 410
110 IF K=-2GOSUB 420
120 IF K=-1GOSUB 430
130 IF K=1GOSUB 440
140 IF K=2GOSUB 450
150 IF K=3GOSUB 460
160 IF K=4GOSUB 470
170 IF TR(1)GOTO 190
180 GOTO 80
190 CLEAR ;IF (A=0)+(A=7)+(A=43)+(A=90)+(A=126)+(A=172)+(A=205)+(A=249)C=C+A
200 C=C+JY(1)
210 IF JY(1)CLEAR 1040 BOX -40,20,40,20,1;BOX -40,-25,30,1,1;BOX -40,-25,1,30,1
220 IF C>255 C=255 1050 &(2)=C;&(3)=C
230 IF C<0 C=0 1060 BOX 40,20,40,20,1;BOX 40,-25,30,1,1;BOX 40,-25,1,30,1
240 BC=C;FC=BC+12
245 IF JY(1)=0CX=-35;CY=0;PRINT C
250 IF JX(1)=1GOTO 10
255 IF JX(1)=-1 GOTO 800
280 GOTO 200
400 A=0;PRINT A;GOTO E
410 A=90;PRINT A;GOTO E
420 A=172;PRINT A;GOTO E
430 A=249;PRINT A;GOTO E
440 A=7;PRINT A;GOTO E
450 A=205;PRINT A;GOTO E
460 A=43;PRINT A;GOTO E
470 A=126;PRINT A;GOTO E
480 RETURN
800 CLEAR ;&(9)=84
810 &(0)=C;&(1)=C;B=C
820 C=0;BC=0;FC=7;NT=0
830 PRINT "    0=BLACK
840 PRINT "    7=WHITE
850 PRINT "    90=RED
860 PRINT "    172=GREEN
870 PRINT "    249=BLUE";NT=3
880 CY=-20;PRINT "SELECT COLOR";NT=0
890 K=KN(1)C50+2
895 CY=-30
900 IF K=0GOSUB 1200
910 IF K=1GOSUB 1210
920 IF K=2GOSUB 1220
930 IF K=3GOSUB 1230
940 IF K=4GOSUB 1240
950 IF TR(1)GOTO 970
960 GOTO 890
970 CLEAR ;IF (A=0)+(A=7)+(A=90)+(A=172)+(A=249)C=C+A
980 C=C+JY(1)
985 IF JY(1)CLEAR
990 IF C>255 C=255
1000 IF C<0 C=0
1010 NT=0;BC=C;FC=B
1015 IF JY(1)=0CY=0;PRINT C;CX=3;CY=0;PRINT B
1020 IF JX(1)=1&(9)=50;GOTO 10
1025 IF JX(1)=-1CLEAR ;GOTO 820
1030 IF TR(1)=0GOTO 980
1070 GOTO 980
1200 A=0;PRINT A;GOTO F
1210 A=7;PRINT A;GOTO F
1220 A=90;PRINT A;GOTO F
1230 A=172;PRINT A;GOTO F
1240 A=249;PRINT A;GOTO F
1250 RETURN

```

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Once you have this utility program on your tapes, you will be able to make a good assessment as to the colors to be used in a particular program you are developing. It starts out by asking for a general color area, and then it will step through the hues (using the joystick). When you find one you like, moving the joystick to the left will cause the screen to split, and you can make your second choice on the left side. In this way you can easily see how the colors will look. And as you do this, the color numbers appear to identify them.

MORE BLUE RAM BASIC. Since the last ARCADIAN was published, considerable progress has been made toward loading and running BASIC programs in the Blue Ram. Two separate approaches have been pursued, each with its own advantages and trade-offs. The first approach is along the line described briefly in the last ARCADIAN where CALLs are made to BASIC segments which are essentially line-extensions to the line containing the CALL. Line numbers as such are not used and special linkages are required to access a segment. (See ARCADIAN pages 15 and 16) An editor to assist in the entering and dumping of a Blue Ram BASIC program part is being sent free of charge to all Blue Ram owners in the form of a letter from Perkins Engineering. The letter contains a series of short programs to aid in writing and entering Blue Ram BASIC programs. The advantage of this programming approach is that the total program size can exceed 6000 slightly. Its trade-off is in the careful planning required to plan and debug program segments in advance of entering them.

The second approach is a "Cadillac" compared to the "bicycle" first approach. While the "bicycle" is more efficient in terms of available memory space for programs, the "Cadillac" has all the comforts of home. Just enter program lines into the Blue Ram as you would in normal memory. The procedure is as follows:

1. Load the Blue Ram Operating System. The Blue Ram Operating System (1.0) is available on tape for \$9.95 and provides the high-level linkages and support routines necessary to program both the normal and Blue Ram memory in a straight-forward, compatible way.

2. Enter normal memory program lines as usual with line numbers followed by program statements. At the end of the normal memory segment, enter either a STOP statement to end processing, or a GOSUB nnn* statement to continue processing in the Blue Ram memory.

3. Perform a CALL24576 statement (without a line number) to inform the Operating System that the following lines are to be entered into Blue Ram memory. The Operating System will respond with a BR> prompt. All program lines entered under the BR> prompt will be stored in Blue Ram memory. Use line numbers in the normal way except that Blue Ram line numbers must be higher than normal memory line numbers. Press GO without any statement to return to normal memory (and the normal> prompt). Lines may be entered or deleted at will in both memories and automatic line sorting occurs in both memories also. While in the Blue Ram mode (BR> prompt), the LIST statement will list the program lines entered into the Blue Ram. PRINT RM will display the remaining program memory available in the Blue Ram similar to the way PRINT SZ displays the remaining available normal program memory.

4. Enter an RPLnnn/xxx/yyyy statement to edit a portion of an existing line. RPL is a new command interpreted by the Operating System. nnn is any existing line number in either memory. / is a delimiter which may be any symbol not in the subject text. Which ever symbol is chosen must be used in both places in the statement. xxx is any text segment in the existing line (including the line number) which is to be replaced by the new text segment yyyy. Only the first occurrence of the existing text segment will be replaced. The old and new text segments need not be the same length and lack of a new segment is taken as a simple delete.

5. Program transfers to subroutines in Blue Ram memory are via GOSUB nnnn statements, where nnnn is the line number of the beginning of the subroutine. Variations of this statement are:

- | | |
|--------------|--|
| GOSUB nnnn | Performs a subroutine call in the normal way to both normal and Blue Ram memory. |
| GOSUB nnnn* | Equivalent to a GOTO nnnn when accessing Blue Ram memory. Illegal for normal memory. |
| GOSUB nnnn** | Equivalent to a return from the current Blue Ram subroutine followed by a GOTO nnnn. This statement acts as an abnormal exit from a subroutine and is illegal for normal memory. |

The GOSUB statement as applied to Blue Ram line numbers has been expanded in format to include parameter passing in the same statement. For example: GOSUB 3400,23,Q+N-5,"TEXT XXX";... is equivalent to: A=23;B=Q+N-5;C=(text address);GOSUB 3400. Each parameter following the object line number is automatically transferred to the letter variables beginning with A. Where a text string is a parameter, the memory address of the string is passed as the parameter. The called subroutine can then access the text string using the %(n) form. For example:

```
1200 GOSUB 5000,"DATE",D
:
5000 PRINT "ILLEGAL ",;FOR A=A TO A+15;C=%(A):256;TV=RM
5010 IF C#34 NEXT A
5020 PRINT " ",B
```

Running line 1200 would print the following: ILLEGAL DATE 219 assuming, of course, D had the value 219 in it. The parameter passing can be used in conjunction with the asterisks to form some very versatile subroutines and other program segments.

THE BLUE RAM COMMUNICATIONS INTERFACE will be available January 15 for connection of the Blue Ram with keyboard to a Livermore STAR modem for communications with other ARCADIANs and other computers. The basic kit is \$69.95 including all parts, program tape, and documentation. An optional port for the BASE2 800B printer is also available for \$10.00. This printer can be bought for about \$600.00 and features a programmable font and graphics. The programmable font allows the use of the Bally character set including multiply and divide signs and the graphics allows the printing of what is on the screen (literally). The interface is also available wired and tested for \$99.95 including the printer port. A special package price of \$299.95 includes the interface kit, a STAR modem, a special Source communications software package, and membership in the Source. This package represents a \$50.00 savings and is available only to ARCADIANs. The special Source communications package features a smaller character set allowing 40 characters on a line and 14 lines of text. Other features include: Auto carriage return to prevent lost mail text, auto CNTL-S - CNTL-Q to hold one page of text until it is read, bell character, send and receive characters in different colors, and more...all tailored to the protocol of the Source. By itself this program is \$19.95.

I can supply the BASE 2 printer at \$600., and a membership in The SOURCE at \$100. California residents add tax to these and the above prices.

CASSETTE REVIEW

Date: 8/30/80

CASSETTE NAME: Program Tape #1
 PROGRAMS ON CASSETTE: Space Battle 9.0; Bombardment 2.0; Bullseye 2.0;
 Startrek III 11.2; Chase III 1.0

CASSETTE PRICE: \$10.00	LISTING PRICE: Not Available
SOURCE	Name: Mark Keller
	Address: 9536 Shumway Drive
	City: Orangevale State: CA ZIP: 95662

Reviewed by Bill Rueger Age 31

PROGRAM NAME: Space Battle 9.0

DESCRIPTION: You must shoot down the UFO. You have a limited amount of time and ammo in which to get the UFO into your gunsight and fire. The UFO becomes more elusive as your aim gets better. Unfortunately, this game is very similar to others and not as sophisticated.

RATING % based on applicable rating items. 41/72 = 56.9%
 PD= 8 PP= 5 USF= 5 LC= 5 OC= 5 LI= 4 EV= XX EU= 5 OV= 4
 Time to play 5 min. For ages All # of players 1

PROGRAM NAME: Bombardment

DESCRIPTION: A grid of numbers is presented and you must pick out four of them as your "forts". The computer also has a similar grid and it picks out four also. You alternate with the computer in trying to guess which locations are chosen by use of the hand controller. The first one to guess them all is the winner. Not a very exciting game and tiring after a few rounds.

RATING % based on applicable rating items. 44/72 = 61.1%
 PD= 7 PP= 7 USF= 6 LC= 4 OC= 5 LI= 3 EV= XX EU= 7 OV= 5
 Time to play 3 min. For ages All # of players 1

PROGRAM NAME: Bullseye

DESCRIPTION: A dart game. No graphics, but a choice of three "throws", each with a different set of odds. It allows for up to 20 players to play, but unfortunately, it is not a very exciting game.

RATING % based on applicable rating items. 53/72 = 73.6%
 PD= 8 PP= 7 USF= 7 LC= 6 OC= 6 LI= 6 EV= XX EU= 7 OV= 6
 Time to play 5 min. For ages all # of players 1 to 20

PROGRAM NAME: Star Trek III

DESCRIPTION: THE BEST THERE IS!! This is a real time version. It incorporates ALL the features of the 16K-plus versions. Klingons actually move in the Quadrant you are in. When moving, they can utilize a "cloaking device" which make them temporarily invisible. When you fire a phasor or a photon torpedo, you see it move on the screen. Five commands are available including direction and energy unit designations. You travel in a 9x9 universe. This is definitely the best Star Trek available for the BALLY. It's really ingenious how so much can be crammed into 1.8K. If you're into Startrek, this is the one for you. Worth the price of the Tape alone!

RATING % based on applicable rating items. 71/72 = 98.6%
 PD= 8 PP= 9 USF= 9 LC= 9 OC= 9 LI= 9 EV= XX EU= 9 OV= 9
 Time to play 30-60 min. For ages All # of players 1

PROGRAM NAME: Chase

DESCRIPTION: Robots are out to get you. Similar to "BOTS" already published in the ARCADIAN, but you are able to pick the number of robots and also the number of walls. The playing field is also larger. This is a challenging and fun game.

RATING % based on applicable rating items. 58/72 = 80.6%
 PD= 8 PP= 8 USF= 8 LC= 7 OC= 6 LI= 7 EV= XX EU= 7 OV= 7
 Time to play 5 min. For ages All # of players 1


```

2 .
3 .
4 .ALCHEMISYMMETRICAL          ART
5 CLEAR ; RETURN ; NT=0; &(10)=173; GOTO 20
10 FOR N=1 TO G
11 X=X+(HbQ); Y=Y+(IbR); A=A+(JbS); B=B+(KbT); U=A-(JbS); V=B-(KbT); LINE U,V,4; LINE
X,Y,F; LINE A,B,E
12 LINE -U,-V,4; LINE -X,-Y,F; LINE -A,-B,E; LINE -U,V,4; LINE -X,Y,F; LINE -A,B,E;
LINE U,-V,4; LINE X,-Y,F; LINE A,-B,E; NEXT N
20 L=RND (3)+15; BC=RND (32)b8+RND (3)-1; FC=BC+RND (32)b8+RND (4)+1; C=RND (5)-3
; M=M+1; IF C=0 C=2
30 O=BC+RND (32)b8; P=FC+RND (32)b8; &(0)=0; &(1)=0; &(2)=P; &(3)=P; IF M>1 BC=2; M=0;
FC=RND (32)b8+(2bC)+2; &(9)=50; GOTO 50
40 GOSUB L+25; GOTO 50
41 &(9)=148; RETURN
42 &(9)=20; RETURN
43 &(9)=20; &(0)=BC; &(1)=BC; RETURN
50 Q=RND (5)-1; R=RND (5)-1; S=RND (5)-1; T=RND (5)-1
60 G=RND (20)+5; F=RND (4); E=RND (4); IF F=4 F=1
70 H=RND (3)-2; J=RND (3)-2; K=RND (3)-2; IF E=4 E=2
80 I=RND (3)-2; IF E>1 IF F=3 F=2
90 IF (ABS(A))-X>50 A=0; BC=144; &(0)=144; &(1)=144; FC=RND (32)b8+RND (4)+1
100 IF (ABS(X))-A>50 X=0; BC=129; &(0)=129; &(1)=129; FC=RND (32)b8+RND (4)+1
110 IF (ABS(B))-Y>30 B=0; BC=224; &(0)=224; &(1)=224; FC=RND (32)b8+RND (4)+1
120 IF (ABS(Y))-B>30 B=0; BC=0; &(0)=0; &(1)=0; FC=RND (32)b8+RND (4)+1
130 IF (ABS (GbIbR+Y))>39 GOTO 50
140 IF (ABS (GbKbT+B))>35 GOTO 50
150 IF (ABS (GbJbS+A))>79 GOTO 50
160 IF (ABS (GbHbQ+X))>72 GOTO 50
170 GOTO 10

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MEMORY EXPANSION

A motherboard/bus system is one in which a printed circuit board (motherboard) contains a number of connectors that are wired in parallel. Option items are contained on "cards" which plug into any of the connectors. To tell the computer which option you want, you have to give it some sort of address, such as "USE SLOT 3". We now have the first multi-option expandable bus system in the final stages of production, and next month's issue will have the details. The basis for this new system is a metal cabinet with a 5-slot motherboard, a bus cable connector, fuze protected power supply, and on/off switch with indicator lamp. Once you have purchased this unit, you can buy any or all of the below options - when plugged in they are ready to go.

Options to be available next month will be:

1. 16K memory board.
2. High speed cassette interface at 2400 baud with dual cassette capacity.
3. Additional 5-slot bus expansion unit.
4. 2K EPROM board with 1K operating system monitor included. Allows keyboard and tape input without Bally BASIC language.
5. 53 key ASCII encoded keyboard with cable and connector.

Alternative Engineering, having some problems with mail delivery at the 1 Gilbert Drive address, have moved to a postal box- P.O. Box 128, Gardiner, ME. 04345. I have been using their power supply (\$25, see ad p 106) for some time now and am well pleased with it. Really heavy duty, professional in appearance, and runs cool.

ADS:

- For Sale: Computer Ear-Complete with software & instruction manual \$45.
Mike Maslowski, 9 Arthur Ave. Clarendon Hills, IL 60514 312/654-8937
- Hand Controllers Repaired; Bill Mead, 7531 Chile, Buena Park CA 90620

BALLY/ASTROVISION SOFTWARE and HARDWARE SOURCEBOOK

Included in this Sourcebook are descriptions and source information on over 230 Software and Hardware Items. The Software is indexed by Program Name, Type of Program and Program Source. The Hardware is indexed by Hardware Item, Hardware Classification, and Hardware Source. This Sourcebook of 50+ pages is available for \$ 5.00 from Richard M. Houser
635 Los Alamos Ave.
Livermore, CA 94550

* Software from Steve Walters, 556 Langfield, Northville, MI 48167 (313)349-1083
Each listing \$2.00; all four listings for \$5.00, or with tape for \$10.00.

- (1) MEMORY MAZE: study the maze, then try to move thru it while it is invisible. Program generates new maze each game. For 1 or 2 players, 3 levels of difficulty, scoring, sound effects and music.
- (2) BLACK BOX: find 5 balls hidden in the box by sending probes into the box and seeing where they come out. Like the Parker Brothers game but with full hand-control operation and screen feed-back (no notes to keep while playing). Scoring, 1 to 4 players, sound effects.
- (3) CRAZYFACE: Bally draws a cartoon Chinaman, football player, witch, singer and mountie. Then Crazyface lets you mix the hats, eyes, noses, mouths and necks to create your own crazy faces.
- (4) HIDDEN WORD FINDER: manipulates a hidden word puzzle (like the ones from school that your kid asks you to find the one last word in!) so that the hidden words can be easily spotted. You may even find words that the puzzle designer didn't notice!

USER GROUP CORNER The Chicago Area Users Club has settled on monthly meetings, the third Sunday of each month at the de Vry Technical Institute, 3300 North Campbell, Chicago. Call Mike Maslowski, 312-654-8937. Late notes from them indicate interesting guests coming up in January (AstroVision representative) and February (Jay Fenton, Bally programmer)

In the Milwaukee area, Doug Alexander, 2911 Parkshire Dr, Racine; 414-886-5973 would like to communicate with local subscribers.

In the Long Island area, Bill Rueger, 336 Beach 38th St., Far Rockaway would be interested in getting together with locals.

NEW BASIC LANGUAGES

1. Astro Vision is planning an updating of the Bally BASIC which will primarily allow data transfer at a 2000 baud rate, about 7 times faster than now possible, to and from tape. This will probably require a pretty good tape recorder to handle the high rate. There will be little change in the BASIC language itself.

2. Extended BASIC, first mentioned on p. 78 of Vol. 2, is close to completion. Delays have resulted from our attempts to make the unit compatible with both the Blue Ram and the Alternative Engineering expansion mentioned on p. 39. This technique is pretty unusual in the microcomputer business where incompatibility is the norm. The BASIC will be contained in 8K.

ARCADIAN

40

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FIRST CLASS